

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau(43) International Publication Date
1 July 2004 (01.07.2004)

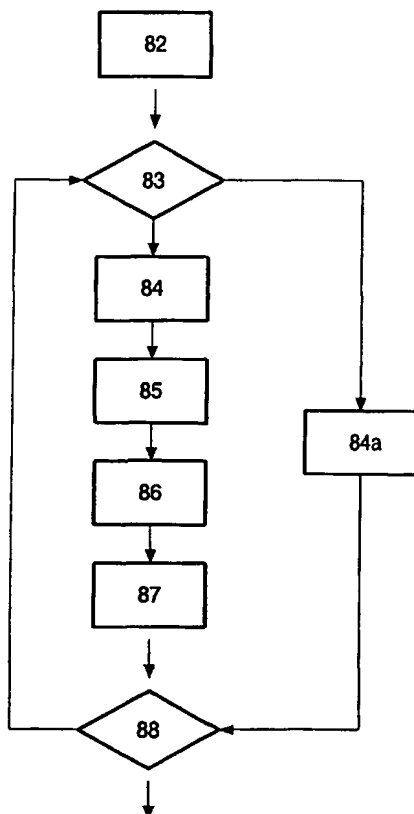
PCT

(10) International Publication Number
WO 2004/055524 A3

- (51) International Patent Classification⁷: **G01R 33/28**
- (21) International Application Number:
PCT/IB2003/005603
- (22) International Filing Date: 2 December 2003 (02.12.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
02102755.2 13 December 2002 (13.12.2002) EP
- (71) Applicant (for DE only): **PHILIPS INTELLECTUAL PROPERTY & STANDARDS GMBH** [DE/DE]; Stein-
damm 94, 20099 Hamburg (DE).
- (71) Applicant (for all designated States except DE, US):
KONINKLIJKE PHILIPS ELECTRONICS N.V.
[NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven
(NL).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **WEISS, Steffen**
[DE/DE]; c/o Philips Intellectual Property & Standards
GmbH, Weissshausstr. 2, 52066 Aachen (DE).
- (74) Agent: **MEYER, Michael**; Philips Intellectual Property &
Standards GmbH, Weissshausstr. 2, 52066 Aachen (DE).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR,
CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR,
KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,
MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU,
SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,

[Continued on next page]

(54) Title: METHOD AND ARRANGEMENT FOR DETERMINING THE POSITION OF AN OBJECT IN AN MR DEVICE



(57) Abstract: The invention relates to a method of determining the position of an object, such as for example a medical intervention instrument, located in the examination area of an MR device. For this purpose, a high-frequency magnetic field is generated in the examination area, which high-frequency magnetic field runs essentially parallel to a main magnetic field that is active at the same time. In the process, a component of the high-frequency magnetic field that is perpendicular to the main magnetic field is produced in the vicinity of conversion means fitted on the object, on account of which perpendicular component of the high-frequency magnetic field a nuclear resonance signal is excited. In conjunction with a gradient field, the nuclear resonance signal is detected and evaluated, so that the position of the object can be determined. Furthermore, the invention relates to an MR device and to specific components for carrying out the method.



SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
26 August 2004

In [REDACTED] lational Application No
[REDACTED] /IB 03/05603

page 1 of 2

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 768 539 A (MARCONI GEC LTD) 16 April 1997 (1997-04-16) claims 1-10 -----	7,8

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

IB 03/05603

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6397094	B1	28-05-2002	DE 19800471 A1 EP 0928972 A2 JP 11244260 A	15-07-1999 14-07-1999 14-09-1999
US 5445151	A	29-08-1995	NONE	
US 6317091	B1	13-11-2001	DE 19844762 A1 JP 2000102521 A	06-04-2000 11-04-2000
WO 0013586	A	16-03-2000	AU 5806299 A CA 2341662 A1 EP 1112025 A1 JP 2002524125 T WO 0013586 A1	27-03-2000 16-03-2000 04-07-2001 06-08-2002 16-03-2000
EP 0768539	A	16-04-1997	DE 69631008 D1 EP 0768539 A2 JP 9108200 A US 5819737 A	22-01-2004 16-04-1997 28-04-1997 13-10-1998